



Port Strategies for Greener Goods Movement

presented by

Robert Kanter, Ph.D.

Director of Planning and Environmental Affairs



Clean Air Action Plan Development

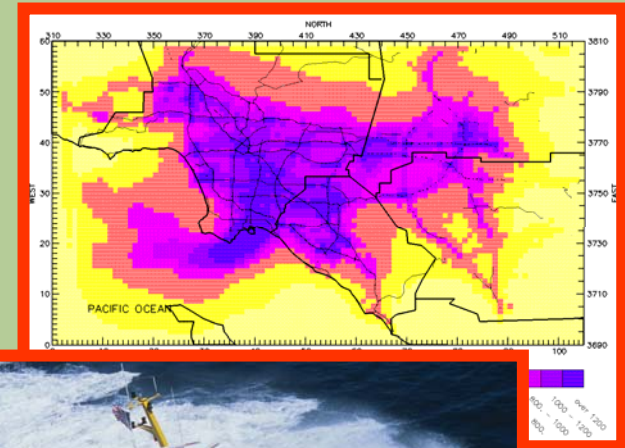
- SPBP Clean Air Action Plan Working Group formed
 - Both Ports
 - South Coast Air Quality Management District (AQMD)
 - California Air Resources Board (CARB)
 - Environmental Protection Agency (EPA)





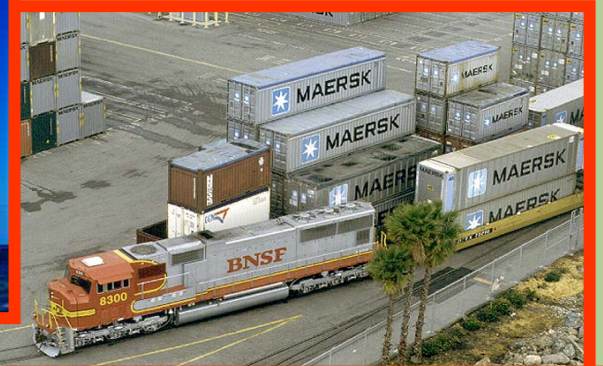
Action Plan Drivers

- Minimize health risk from port operations
- Accelerate existing emissions reduction efforts
- Set consistent project-specific & source-specific standards
- Enable port development





Sources and Challenges



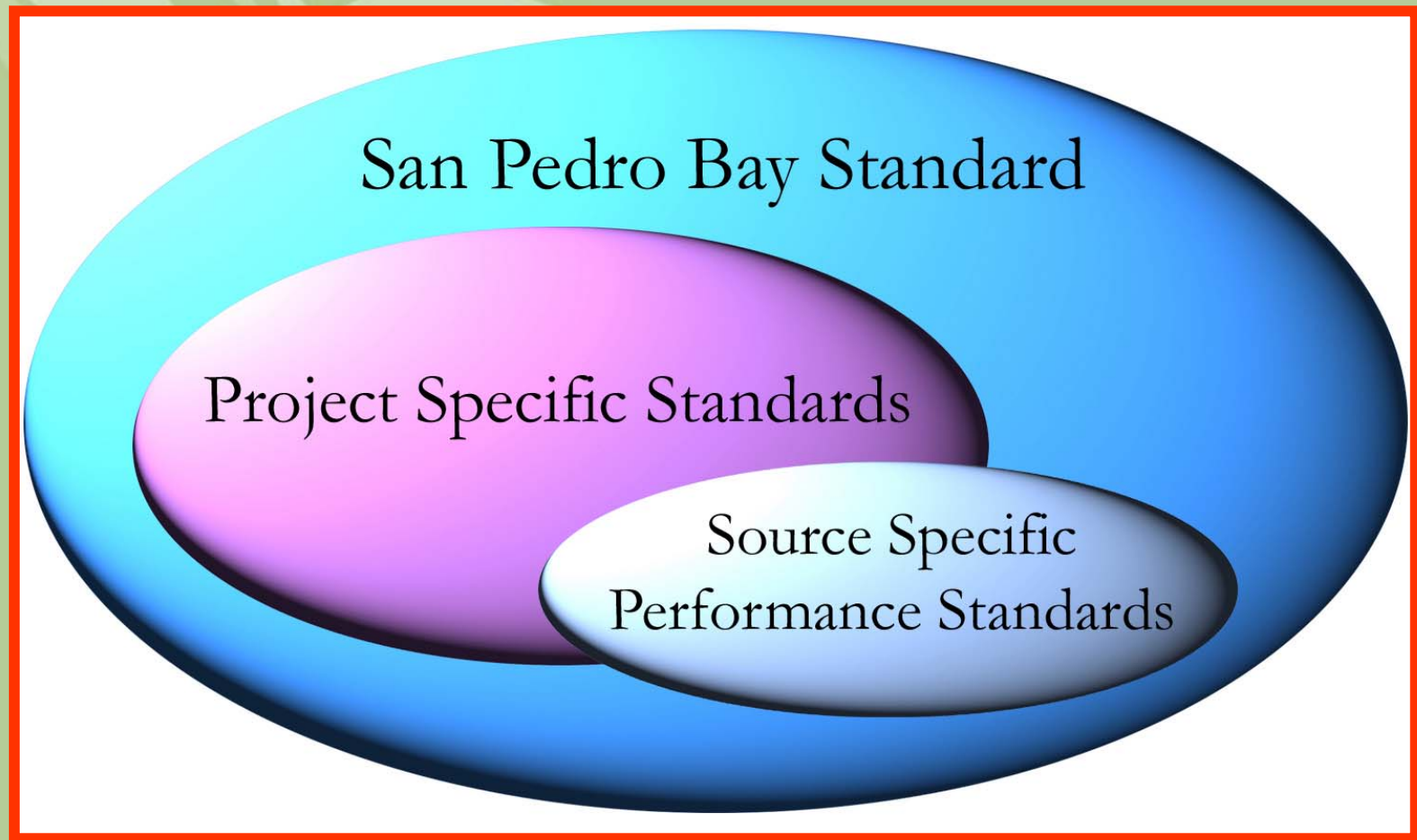


Target Pollutants: DPM, NO_x, SO_x

- DPM-Diesel Particulate Matter: Microscopic particles that includes soot from diesel exhaust; toxic air contaminant
- NO_x -Nitrogen Oxides: An ozone precursor that significantly contributes to smog
- SO_x- Sulfur Oxides: A precursor to particulates
- The South Coast Air Basin exceeds federal air quality standards for both ozone and particulate matter



Three Levels of Standards





CAAP Standards - Three Levels

- San Pedro Bay Standards
 - Reduce public health risk from port-related toxics
 - Prevent port-related violations of National Ambient Air Quality Standards (NAAQS)
 - Reduce port “Fair Share” pollutant emissions
- Project Specific Standards
 - Meet 10 in 1,000,000 excess cancer risk threshold
 - Implement maximum feasible controls for projects exceeding CEQA thresholds for criteria pollutants
- Source Specific Performance Standards



Control Measures

Measure #	Control Measure/Initiative
SPBP-HDV1	Performance Standards for On-Road HDV
SPBP-HDV2	Alt Fuel Infrastructure for On-Road HDV
SPBP-OGV1	OGV Vessel Speed Reduction
SPBP-OGV2	OGV Reduction of At-Berth Emissions
SPBP-OGV3	OGV Auxiliary Eng Fuel Improvement Standards
SPBP-OGV4	OGV Main Engine Fuel Improvement Standards
SPBP-OGV5	OGV Main & Aux Eng Emission Improvement
SPBP-CHE1	Performance Standard for CHE
SPBP-HC1	Performance Standards for HC
SPBP-RL1	Rail Switch Engine Modernization
SPBP-RL2	Operational Controls for Line-Haul RR
SPBP-RL3	Clean Rail Yard Standards
	Technology Advancement Program
	Infrastructure/Operation Efficiency Improvement
	Construction Equipment Standards



Ports' Five-Year Commitments

- Heavy-Duty Vehicles (Trucks)
 - Replacement/Retrofit of frequent & semi-frequent callers
 - LNG Fueling Infrastructure
 - Two Ports & AQMD \$206,000,000
- Ocean-Going Vessels
 - 100% compliance w/VSR to 20 nautical miles; extend to 40 nautical miles
 - Port of Los Angeles – 15 berths will be AMP'd
 - Port of Long Beach – 7 to 13 berths will be shore-powered
 - $\leq 0.2\%$ sulfur fuels for main & auxiliary engines
 - NOx and PM controls on new and existing vessels
 - Two Ports \$144,000,000





Ports' Five-Year Commitments

- Railroad Locomotives
 - Standards for switcher and line-haul locomotives
 - Standards for new or modified rail yards
 - Two Ports \$10,000,000
- Cargo Handling Equipment
 - Standards for equipment
- Harbor Craft
 - Standards for harbor craft
- Infrastructure and Efficiency Improvements





Evaluation of Technologies/Concepts

- Technology Advancement Program
 - Combine expertise & resources
 - Source category emission reductions
 - Evaluate “Green Container Transport” concepts
 - Emission inventory improvements
 - Two Ports’ funding commitment: \$15 million over 5 years



Implementation Strategies

- Lease requirements
- Tariff changes
- CEQA mitigations
- Incentives
- Voluntary measures
- Capital lease backs
- Credit trading
- Government-backed loan guarantees



Estimated Emission Reductions

Trucks	728	tons/yr DPM
	6,417	tons/yr NOx
Ships	448	tons/yr DPM
	6,296	tons/yr NOx
	2,721	tons/yr SOx
Cargo Handling Equipment	11	tons/yr DPM
	376	tons/yr NOx
PHL Switchers	3	tons/yr DPM
	163	tons/yr NOx
Total Reductions - 5 th Year	1,242	tons/yr DPM (> 3,600 tons)
	13,090	tons/yr NOx (> 40,000 tons)
	2,721	tons/yr SOx (> 8,500 tons)



Funding

- Proposed Minimum Commitments Over Next Five Years:
 - Port of Los Angeles \$177,400,000
 - Port of Long Beach \$181,000,000
 - SCAQMD Initial Commitment \$36,000,000
 - Other Commitments Needed:
 - Bond & Other Funding?? “Our Fair Share”
 - Tenants/Shipping Industry???



Tracking, Monitoring, and Reporting

- Expanding port air monitoring network
- Emissions Inventory
- Regular monitoring
- Annual reporting on Clean Air Action Plan progress



“With the Clean Air Action Plan we have expanded and accelerated the efforts of the San Pedro Bay Ports to significantly reduce air pollution associated with Maritime Goods Movement. This in turn will help protect the community from health impacts associated with Port operations. I am delighted that the two Ports have partnered with the AQMD, CARB and EPA to tackle these challenges together. ”

- Robert Kanter, Ph.D.
Port of Long Beach
Director of Planning and Environmental Affairs

